

Appl. No. 10/686,367
Amdt. dated August 18, 2004
Reply to Office Action of July 1, 2004

PATENT

REMARKS/ARGUMENTS

Claims 1-7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bryan in view of Scheu et al. The Examiner contends that it would have been obvious to have applied the PDLC-based sensor material as well as the adhesive by spin coating with the expectation of equivalent results, reasoning that spin coating is well-known means of coating and one of ordinary skill would expect similar results when one application method is substituted for another. The Examiner further contends that it would have been obvious to have used a spin chuck having a recessed collar around the substrate, with reference to Scheu, in the Bryan process, because Bryan's substrate is noncircular, and a uniform coating is desired. Other secondary points have also been raised by the Examiner.

The Applicants respectfully traverse the rejection and offer the following observations in support of patentability of the invention, particularly as now claimed.

An examination of the Bryan reference discloses that Bryan involves a preliminary application of a layer of an organic adhesive (*such as epoxy, cyanoacrylate, silicone-based RTV, or UV Curable Epoxy*) on a substrate, followed by laminating a film supported liquid crystal (*Mylar polyester film supported NCAP or PDLC*) onto the substrate, wherein the Mylar film is removed and--optionally--a thin layer of an organic adhesive (*epoxy, cyanoacrylate, silicone-based RTV, or UV curable epoxy*) is applied over the NCAP (or PDLC), and then a pellicle is laminated to yield a result. The adhesives of Bryan (*epoxy, cyanoacrylate, silicone-based RTV, or UV curable epoxy*) are small organic compounds which have now been discovered to definitely damage NCAP or PDLC. As now claimed with specificity, there is either no adhesive, or the adhesive is a water-based compound.

Specifically, the present invention claims, as herein paraphrased:

+Sensor material (PDLC) directly coating the substrate *without* use of adhesive between the substrate and the PDLC.

+Polymer-Liquid Crystal phase separation by a spin coating process.

+Use of water-based polymer emulsion (*rather than organic compounds, as taught by Bryan*) as the adhesive between the sensor material (PDLC) and a pellicle. For a

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polymer emulsion, water is evaporated during coating, leaving a thin layer of polymer. No curing is involved.

Hence the claimed process is not an obvious extension of the Bryan process.

The citation of Scheu adds nothing to correct these deficiencies. The only relevant similarity is that an element is used to form a circular feature out of a noncircular element. The Scheu reference is silent on the relevance of adhesives.

To further distinguish the invention, the Applicants have removed unnecessary limitations, namely, the recitation of a collar has been replaced with the provision of a regularized substrate, and the specific step of cleaning the edges has been omitted from the broadest claim.

Harada has been cited of interest. It will be noted that, unlike Harada, the present process as disclosed in specific embodiments uses spin coating for both the film thickness control and for controlling liquid crystal droplet size during the coating process. This feature follows from the nature of the methodology recited in claim 1.

Claim 6 has been canceled, and claims 8 and 9 have been added to recite specific features of the claimed invention.

CONCLUSION

In view of the foregoing, the Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

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If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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